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At the George Peabody College for Teachers, Nashville, Tennessee, 50 male students responded to a questionnaire concerning their reactions to individuals having mental or physical disabilities, to persons of another race, and to gifted persons. The 20 questions (scale items) focused on association with 12 types of "disabled" persons (disability labels). The test was designed to explore connotative reactions to different disability labels when personal involvement is implied, and was administered under standard and ambiguous testing conditions. In the ambiguous condition, the questionnaire minus the scale items was used and the students were asked to repeat their original responses from memory. Disability labels used were: epileptic, mentally retarded, blind, cerebral palsied, gifted, Negro, crippled, emotionally disturbed, deaf, amputee, normal, and stutterer. Although not considered disability labels, gifted and Negro were included for separate interpretations of sub-scale and total scale scores. The 20 items ranged from "How would you feel about talking in public with each of the persons listed?" to "How would you feel about marrying each of the persons listed?" Answers were made along a 5-point comfort-discomfort continuum to which weights (1 through 5 for intensity of feeling) were assigned. The results confirmed the hypothesis that connotative meanings are commonly assigned to mentally and physically handicapped persons by non-disabled groups in our society, and that this attitude is extended to members of racial minorities. (WM)

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50 graduate students were administered a scale designed to test the connotative meaning of different disability labels along a comfort-discomfort continuum. Following standard administration, Ss were asked to repeat their responses without the original scale items (ambiguous condition). The effect on scores arising from individual differences in interpreting scale anchors was estimated and partialled out. Corrected scores were found to be relatively stable when the results of the first and second test conditions were compared. The data were interpreted as offering no support for the claim that ambiguous test conditions (as defined in this study) tend to increase socially acceptable response sets.

Results under standard conditions were analyzed to determine the validity of the hypothesis that connotative reactions to disability labels produce an invariant rank ordering of labels along a comfort-discomfort continuum. Data from previous research were partially confirmed under both the ambiguous and standard testing conditions used in this study. The cultural uniformity hypothesis gains additional support from the results of this investigation.

Semmel and Dickson (1966) attempted to develop a method for determining connotative reactions to different disability labels and one racial label (Negro) in described situations that varied in the degree of implied personal involvement. The scale developed yielded responses to each label along a comfort-discomfort continuum for each situation, and a total scale score for all disability labels across items. Significant differences between labels were reported. The authors postulated that the results reflected a culturally determined hierarchy in the connotative meaning of disability labels.

Several writers have expressed concern for the effect of response biases and sets on the validity of measures (Cronbach, 1946; 1950). It is the general consensus that response biases are most operative under relatively unstructured or ambiguous testing conditions.

The present study was designed to explore the connotative meaning of disability labels under standard and ambiguous testing conditions. The ambiguous condition was defined by the absence of test items in the presence of labels. Ss were asked to recall their responses to all items for each label completed

under the previously administered standard test conditions. It was predicted that the ambiguous condition would produce response sets reflected in an increment in mean total label score when compared to total label scores obtained from the standard test condition--but the rank order of individual label scores was not expected to differ.

A feature of the present study was the elimination of response sets associated with differential interpretations of scale anchors. It was felt that responses to disability labels are made by Ss using a "normal" frame of reference. By obtaining responses to a "Normal" (N) label, it was possible to appraise directly the meanings attributed to anchors by Ss, and thus to correct all responses to disability labels by centering them around the N label score. This technique had the effect of partialling out the individual difference effects of semantic response sets to scale anchors for all test items.

Finally, the investigation was designed to obtain additional data on the relative position of disability labels along a comfort-discomfort continuum. It was hypothesized that the results obtained in earlier research (Semmel & Dickson, 1966) would be reproduced under both standard and ambiguous test conditions. Specifically, it was expected that the rank order of disability labels along the comfort-discomfort continuum would remain invariant under both conditions when compared to earlier findings.

Method

Subjects. Ss were 50 graduate students enrolled in the Departments of Special Education and Psychology at George Peabody College for Teachers. All Ss were candidates for advanced graduate degrees. The departments conduct considerable scholarly and research activity on topics related to handicapped children. All Ss took the Miller Analogies Test and the Graduate Record Examination upon entering graduate school. Since their admission in the school was contingent upon relatively high percentile ranks on these examinations, it was assumed that the group was relatively homogeneous and superior in general intelligence.

Instrument. A revision of the SAQ scale developed by Semmel and Dickson (1966) was used to collect the data for this study. The revised scale consists of 20 items of implied social-psychological situations demanding various degrees of interaction with persons identified by disability labels. Items ranged from:

"How would you feel about talking in public with each of the persons listed?" to "How would you feel about marrying each of the persons listed?" Ss responded to each item 12 consecutive times with reference to 12 labels before passing on to the next item. The labels used were Epileptic (E), Mentally Retarded (MR), Blind (B), Cerebral Palsied (CP), Gifted (G), Negro (NE), Crippled (C), Emotionally Disturbed (ED), Deaf (D), Amputee (A), Normal (N), and Stutterer (S). The revised SAQ scale differed from the original instrument in three ways: (a) the key was expanded from 3 to 5 scale anchors; (b) the number of items was increased from 10 pairs of parallel items to 20 unparallel items; (c) the number of labels was increased to 12 from the original 8 by the addition of labels G, C, ED, and A. The expanded number of items and scaling points was expected to improve sub-scale and total scale reliabilities. The increase in the sample of items further strengthens the rational argument for the content validity of the revised instrument.

The revised scale produce 12 sub-scale scores (SS) for respective labels and a total scale score (TS). SS scores were obtained by summing across items for each label. Responses to all items were made along a 5-point continuum (Very Comfortable-VC, Comfortable-C, Indifferent-I, Uncomfortable-U, and Very Uncomfortable-VU). Weights were assigned to each scale anchor such that VU=1, U=2, I=3, C=4, VC=5. To partial out the effect of semantic response sets in interpreting scale anchors, raw scores were corrected according to the following formula:

$$(1) \qquad CSS = \frac{(10)\ \Sigma X_i}{\Sigma X_n}$$

where CSS is the Corrected Sub-Scale score for any label, ΣX_i is the sum of weighted raw scale points across items for the ith label, and ΣX_n is the sum of weighted raw scale points across items for the N label.
The total scale scores (CTS) were obtained by summing across CSS scores and subtracting the CSS score for the N label. Formula (1) assumes that all Ss utilize the normal frame of reference in making judgments about disability labels. Thus, anchors used for N sub-scale were used to estimate S's response set in interpreting scale anchors.

Two label sub-scales were included in the CTS scores although they are not usually considered disability labels: Gifted (G) and Negro (NE). The G label scores were included as a referent in interpreting CSS results. The G CSS scores were assumed to produce levels equal to or greater than the N CSS scores. A further assumption was that the variance contributed to CTS by G would be minimal; the inclusion of the G sub-scale would add a constant to the

total scores without changing their relative values. The NE scores were included as a test of the prevalent hypothesis that reactions to disability groups are similar to those toward religious and racial minority groups in our society (Wright, 1960). It was assumed that the NE label sub-scale would contribute significant variance to the total scores. Therefore, the CTS scores were interpreted with the understanding that the NE label functions as a disability label.

Procedure. Ss were each given a copy of the revised SAQ and a special answer sheet. E read the directions, which were also printed on the front page of the questionnaire.

> We are interested in different people's feelings about doing things with other people. We would appreciate your candid responses to the accompanying questionnaire. Your responses will remain anonymous. Please do not write your name or any identifying marks on your answer sheet. There are 20 questions in this questionnaire. You are asked to respond to each question separately by indicating a response for each of 12 types of people listed on your answer sheet. In making your responses, please follow these directions carefully.
>
> 1. Read the first question carefully.
> 2. Read the 12 words or phrases listed on your answer sheet.
> 3. Respond to the column provided for the question. Use the following key in making responses: (The response key was then read orally while Ss read it silently at their seats).
> 4. Follow the above procedure for all remaining questions.
> 5. Remember: respond to each listing for a question before moving on to the next question.
> 6. Work as rapidly as possible always working down the column (E illustrated with answer sheet) designated for the question on your answer sheet.
> 7. We are interested in your first response to each item. Therefore, please do not erase any responses.

Ss were asked if they had any questions but they had none. E then asked Ss to place a number in the upper right hand corner of the answer sheet that only they would be able to identify. E then said;

> Please turn the page and begin with question #1. You may work at your own rate of speed--but try to move along as rapidly as you can. When you finish put your answer sheet under your seat and wait for the others to finish. (Ss appeared to have no difficulty in understanding the instructions.)

E moved about the room to make certain that all Ss were completing the task correctly. All Ss completed the task within 20 minutes. A second blank answer sheet was then distributed to Ss. E said, "Please put the number you used on the first answer sheet on this second answer sheet."

> We are now interested in how well you can remember the responses you used on the first sheet. You will remember that on the first sheet you worked down the page (demonstrating), now try to remember what you put in each of the boxes but instead of working down the sheet, work across the sheet. For example, the first word on your sheet is Epileptic. Try to remember the 20 responses you gave across the sheet. Then go on to the next word and do the same. Continue until you have a response for each box on your sheet. We do not expect you to remember all of the responses, but make certain you put a response in each box anyway. Are there any questions?

Several Ss complained that the task was too difficult. They indicated their displeasure by their expression and by their murmuring. E responded to complaints with, "Do the best you can." After approximately 1 minute, E said, "You may take as much time as you wish on this second part--but please try to work as rapidly as is comfortable for you. You may begin." Ss began to work with no apparent difficulties; inter-subject communication immediately ceased and test conditions comparable to those during the standard administration phase were quickly established. Ss took approximately 20 minutes to complete this second part of the task.

Results

A matched-pairs t test was computed to determine the significance of difference between CTS scores obtained from the standard conditions (SC) and the ambiguous condition (AC). A mean difference of .32 yielded a $t = .31$, which was insufficient to reject the null hypothesis ($p > .05$). It was concluded that CTS score differences between tests were not significantly different from chance expectancy. The SC yielded a mean CTS = 90.80, SD = 11.50. The AC resulted in a mean CTS = 90.92, SD = 13.99. The correlation between SC and AC CTS scores was $r = .58$ ($p < .05$).

A Subjects x Treatments analysis of variance design was used to determine the difference between mean CSS scores under SC. Hartley's F max test was used to test the assumption of homogeneity of variance for the ten subscale distributions used in this analysis. The Normal and Gifted label CSS scores were omitted from the analysis of variance. The Cerebral Palsied CSS score distribution yielded a maximum Variance = 3.64, while the Stutterer CSS distribution yielded a minimum Variance = .97. The resulting variance ratio produced F max = 3.75. This value represents a small but significant departure from the homogeniety of variance assumption (Min. Var. = 95, df = 49,

k = 10, F max = 3.29). Following Lindquist (1953, p.86), a higher "apparent" level of significance was adopted. All tests of significance were tested at the .01 level and are reported here at the .05 level. Table 1 summarizes the results of the variance analysis. It will be noted that significance between labels and between S variance ratios was obtained. A critical difference (d) was computed to determine which mean CSS scores differed significantly. Table 2 summarizes respective d values.

Insert Tables 1 and 2 About Here

The last line in Table 2 shows the mean CSS scores for all label sub-scales. For comparative purposes, the mean CSS scores for the Normal and Gifted labels are included. Ranking the mean scores resulted in the following order, from high to low along the comfort-discomfort continuum: G, N, S, D, C, A, B, NE, E, MR, ED, CP. It can be noted further from Table 2 that there is no significant difference between the mean scores of the first two ranks (G and N); between ranks 3 through 7 (S, D, C, A, B); between ranks 8 through 10 (NE, E, MR); and no difference between ranks 11 and 12 (ED, CP).

Seven label CSS score means were extracted from the data collected in the present study and separately ranked for the purpose of comparing results with those previously reported by Semmel and Dickson (1966). Table 3 shows the ranked labels obtained from four sub-populations and the data from the present study.

Insert Table 3 About Here

Discussion

The ambiguous testing conditions (viz., the absence of items) following standard test conditions resulted in little change in the central tendency or variance of total connotative reactions to disability labels (CTS). There appears to be a moderately high correlation between performance under the two test conditions. These results do not support the contention that ambiguous test conditions, as defined here, produce greater socially acceptable response

sets. Memory alone cannot account for these results: the number of items and anchors used in the standard condition renders such an explanation highly improbable. It will be recalled that Ss were not informed that they would be asked to duplicate their initial responses until they had completed the first phase of the task and had placed their answer sheet out of sight. Subjective comments from Ss also indicated that they did not remember the specific items of the scale.

The results suggest that Ss responded to the items under the standard condition in accordance with true response tendencies to stimulus cues (labels). Thus, summing across items and partialling out the effects of differential semantic sets in interpreting scale anchors resulted in obtaining a relatively accurate estimate of Ss' commonality vis-a-vis the trait under investigation (connotative meaning of disability labels). When faced with the ambiguous condition which demanded the reproduction of responses without specific samples (items) from the universe of possible items subsumed by the trait, Ss probably projected their generalized reaction to the respective labels. These reactions represent the commonality estimate which was sought in applying an additivity model to the CSS scores obtained under the standard condition. In reacting to the labels under both conditions, Ss probably utilized the entire array of labels in such a way that their responses would fall into a subjectively logical rank ordering. The relative invariance of the hierarchy of labels found between the two conditions in the present study and in comparison with previously reported data supports this interpretation. The results therefore confirm the position postulated by the author (Semmel & Dickson, 1966)--that there exists an invariant hierarchy of connotative meaning assigned to disability labels by non-disabled groups within our society.

To be sure, the ambiguous condition did not perfectly reproduce the rank order obtained in the standard condition, but the differences are more likely the result of a measurement error than of a defect in the cultural uniformity hypothesis. Differences in rank order occurred only with a few labels which fell relatively close together and toward the center of the comfort-discomfort continuum. The scales used were probably not sensitive enough to differentiate such small differences under the two conditions.

The results showing relative scale position of the Negro label offer further support for the contention that racial and religious minority labels evoke affective responses similar to those associated with disability labels.

Semmel and Dickson (1966) reported a low but significant correlation between Pr scale scores of the MMPI and SAQ disability-label responses of college undergraduates. Further research should verify this finding by indicating significant covariation between specific disability-label reactions and generalized attitudes toward racial and religious minorities.

The cross validation of the hierarchy hypothesis points the way to further research into the connotative meaning conveyed by different disability labels. The results of this and previous investigations suggest the utility of searching for factors associated with the overlapping clusters of labels identified. A factor analysis of connotative responses of a large heterogeneous population to a wide variety of labels denoting disability is a logical next step toward fuller understanding of the signification of such labels through the study of their connotative meanings.

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Footnote

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Table 1

Analysis of Sub-Scale Scores Under the Standard Test Condition

Source	df	Mean Squares	F
Between labels	9	23.352	69.916*
" subjects	49	19.771	59.194*
Labels x Subjects	441	.334	------
Total	499		

*Significant at < .01 level.

Table 2

Summary of Critical Differences Between Mean Sub-Scale Distribution Scores

Ranks

Labels	G	N	S	D	C	A	B	NE	E	MR	ED	CP
G		.03	1.06	1.45	1.50	1.51	1.69	1.80	2.07	2.76	2.98	3.10
N			1.03	1.42	1.47	1.48	1.66	1.77	2.04	2.46	2.95	3.07
S				.39	.44	.45	.63	.74	1.01	1.43	1.92	2.04
D					.05	.06	.24	.35	.62	1.04	1.53	1.65
C						.01	.19	.30	.57	.99	1.48	1.60
A							.18	.29	.56	.98	1.47	1.59
B								.11	.38	.80	1.29	1.41
NE									.27	.69	1.18	1.30
E										.42	.91	1.03
MR											.49	.61
Means	10.03	10.00	8.97	8.58	8.53	8.52	8.34	8.23	7.96	7.54	7.05	6.93
SD	.57	.00	.99	1.08	1.42	1.10	1.32	1.54	1.82	1.53	1.80	1.91

Note: Any d > .67 is significant at .05 level.

Abbreviations key:

G-Gifted	D-Deaf	B-Blind	MR-Mentally Retarded
N- Normal	C-Crippled	NE-Negro	ED-Emotionally Disturbed
S- Stutterer	A-Amputee	E-Epileptic	CP-Cerebral Palsied

Table 3

Comparison of Ranked Means for Seven Label Sub-Scales with Previously Reported Data Collected from Special Education and Elementary Education Undergraduate Students in a Northern City (Semmel & Dickson, 1966)

	Present Study Conditions		Semmel and Dickson (1967) Data	
Rank	Standard (SC)	Ambiguous (AC)	Sp. Ed. Undergrad.	El. Ed. Undergrad.
1	S	S	S	S
2	D	B	D	D
3	B	D	B	B
4	NE	NE	NE	NE
5	E	E	E	E
6	MR	MR	MR	MR
7	CP	CP	CP	CP

Note: Rank order from positive to negative connotative meaning (e.g., CP evoked most negative connotations).